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GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

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Grace Line

TALL PALMS POINT TO FINE WEATHER IN VENEZUELA'S IN-BETWEEN CAPITAL

In the Torrid Zone, Caracas has luxuriant palms, flaming poinciana trees, orchids growing wild, mahogany shade trees, and other tropical vegetation. But its altitude—3,000 feet—has a moderating effect on the climate. Thus, climatically, Caracas ranks between the lofty, cold capitals in the Andes to the south and warmer lowland capitals to the north. The Country Club, with an 18-hole golf course, is proof that Caracas enjoys its outdoors (Bulletin No. 2).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Freed Stalingrad Uncorks the Volga

"ALL quiet on the Stalingrad front" means "All's well along the Volga." The Russian triumph at Stalingrad has turned back the Nazi spearhead that was aimed at piercing European Russia's chief transportation artery, the Volga, and spilling the Russian army's lifeblood of supplies.

Its great length—2,325 miles—and its winding course put the Volga in touch with many of the largest Russian cities and their industries, making it the old reliable transport route for raw materials destined for factories as well as finished munitions on the way to the battle front. Tankers haul oil upriver from Astrakhan, transshipped from the Baku refineries on the Caspian.

"Little Mother Volga" a Sister of "Ol' Man River"

Russians call the slow, brown, hard-working stream Matushka Volga, "Little Mother Volga," in recognition of the river's service to practically all the European members of the Russian family.

The longest river in Europe, in size the Volga approaches the Mississippi proper, which is 2,470 miles long without counting the Missouri. In central position within the country also Little Mother Volga resembles Ol' Man River. It drains a basin of more than a half-million square miles.

But the Mississippi's Slavic sister is far different in temperament, largely because the Volga is essentially a northern river. It has run much of its course before it reaches the Minnesota latitudes where the Mississippi rises.

As a consequence the Volga is a weary stream, subdued by the long winter's northern darkness and heavy ice. For more than a third of the year—about 140 days—it may be frozen over in its northern reaches. Even in its southernmost section it is choked with ice for possibly 100 days a year.

For another reason too the Russian "Little Mother" is of a sad and somber disposition, without the dash of Ol' Man River. The source of the Volga is only about 600 feet above sea level, so that throughout its winding length it drops an average of little more than 3 feet a mile—hardly enough for sparkling falls or rushing cataracts, except in its upper reaches. The Mississippi's source is 1,600 feet high, two and a half times as high as the Volga's.

Flows Through Salt Desert to Dying Sea

The great melancholy Volga, unlike the largest rivers of other continents, never reaches the high seas. It empties into the Caspian, a salt sea without an outlet, which the Volga is gradually destroying by filling it in with silt.

The stream's birthplace is a spring in the Valdai Hills, those low, lake-filled highlands southeast of Leningrad whose highest "peak" reaches a mere 1,053 feet.

Once the river flowed north from Kalinin, its first big city, to Yaroslavl, one of the U. S. S. R.'s textile centers. But now the Volga goes also to Moscow. The Moscow-Volga Canal has turned part of the river's waters southward to create water power, increase the city's water supply, and make Moscow a Volga port.

At Gorki, once the Nizhni Novgorod which camel caravans made a great center of exchange between Europe and Asia, the Volga flows past one of the largest automobile plants in the world.

At Kazan, after a generally eastward course of 630 miles, the river meets Asia, for the Tatar-built Kazan is capital of the Tatar Republic, an autonomous

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THREE-CORNERED VENEZUELA WAS NAMED "LITTLE VENICE" BY MISTAKE

The Spanish explorer, Alonzo de Ojéda, trailing not far behind Columbus, sailed into Maracaibo Lake in 1499 and was amazed to find Indian villages built on piles above the water, with natives paddling in canoes from door to door. Because of the resemblance to Venice, he named the waterlogged area Venezuela.

But the United States of Venezuela is a country of non-Venetian mountains (about 25 are above 15,000 feet high), broad plains, and rushing rivers. The Orinoco has built a delta that compares in size with the Amazon's.

On the slopes of the mountain range stretching southeast of Lake Maracaibo (the Cordillera Mérida, a continuation of the Andes) grows much of Venezuela's coffee, especially around San Cristóbal and Mérida. This leading agricultural crop is shipped from the big coffee ports of Puerto Cabello, Maracaibo, and La Guaira. Eastern Venezuela and the coastal reaches produce most of the cacao.

Gold mining, once distributed along the Orinoco Valley around Ciudad Bolívar, is now developing also in the Guiana highlands, around Guasipati. Pearl fishing, rare in the Western Hemisphere, is an industry of Margarita Island.

The chief mineral wealth of the country, however, is the oil of the Maracaibo basin. It is shipped to the near-by Netherlands islands of Aruba and Curaçao for refining.

Both of the chief cities are near the coast. Caracas, the capital, with 200,000 inhabitants, is only 23 miles by train from its port, La Guaira. Maracaibo, with 100,000 people, is an oil and coffee port on the bottleneck between Lake Maracaibo and the Gulf of Venezuela.

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Oil-Rich Venezuela Has Many Natural Resources

(This is the tenth of a series of bulletins, with maps and illustrations, on the republics of Latin America.)

VENEZUELA is one of the world's leading petroleum producers, ranking in 1940 after the United States and the Soviet Union. In 1941 its output was nearly 223,000,000 barrels of oil, an increase of more than 38,000,000 barrels.

Since then, the Venezuelan oil industry (owned chiefly by American, British, and Dutch companies) has been sharply curtailed, but is still a valuable source of fuel for the United Nations.

The oil business has brought the war close to Venezuela, through activity of Axis submarines against Caribbean tankers and the shelling of the Netherlands islands of Aruba and Curaçao, where most of Venezuela's oil is refined.

Petroleum and Pearls, Cattle, Coffee, and Cacao

The importance of petroleum in Venezuela's economy should not, however, obscure the fact that the oil region is only one of the many regional divisions, each with its own resources. Indeed, many Venezuelans feel that the oil business—while contributing through royalties and wages to government income and higher standards of living in certain sections—at the same time has drawn labor and capital from other areas in need of development.

Venezuela has fertile farmlands, yielding coffee and cacao, the chief agricultural exports, together with sugar cane, coconuts, cotton, tropical fruits, and, in the higher districts, grains and other Temperate Zone products.

In various stages of development are its mineral deposits, including gold, copper, iron, coal, salt, tin, asbestos, and mica. This country has a cattle industry and plenty of room for its expansion. It has pearl fisheries, asphalt lakes, and vast forests containing valuable woods and plants.

In all, Venezuela, or the United States of Venezuela, as it is officially known, covers an area of more than 350,000 square miles (map, inside cover), although it has only about 4,000,000 people.

Has Eternal Summer, Perpetual Winter

While Venezuela is entirely within the Torrid Zone, its regional sections range from lowlands in eternal summer to mountain peaks in perpetual winter.

The oil fields, chiefly around Maracaibo Lake in the northwest, with others along the eastern coast, are in the hot, low regions.

South and east of Lake Maracaibo, the mountain country rises abruptly, formed by ranges of the northern Andes and coastal mountains running parallel with the Caribbean. In this part of Venezuela is found the greatest concentration of population. Along its mountain slopes grows much of the nation's coffee crop.

In these uplands, too, are found the leading manufacturing centers, including the capital, Caracas (illustration, cover).

Beyond the mountains lie the great plains (the *llanos*), a region of tall grass, cattle, and mule-riding cowboys. Rolling down to the muddy waters of the broad Orinoco, these plains are home to scattered ranchmen, occasional villages, and lonely farms, where the traditional hospitality of the open country prevails.

This part of Venezuela at various times has supported large herds of cattle in spite of rainy-season flood and dry-season drought, of tropical heat and insect

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state of more than two and a half million people of Tatar blood.

From Kazan south the Volga is a necklace stringing together an odd line of such autonomous republics—patches of non-Russian peoples speaking their own languages, wearing their own costumes, in the midst of the U. S. S. R. About 600,000 people, before the war, lived in the Volga German Republic, an area the size of Belgium populated largely by descendants of German immigrants who settled there at the invitation of Catherine the Great in the 18th century.

Other such republics are the little nations of the half-million Maris, the million Chuvash (both related to the Finns), and the 220,000 Mongolian Kalmucks.

A queer quirk of the Volga is the Samara Bend—a curlicue made when the river flows 100 miles around to get 13 miles south. Work had been started before the war to build there a power plant which would be the greatest in Russia.

At the eastern apex of the Samara Bend stands Kuibyshev (formerly Samara), a secondary capital of the U. S. S. R. while Moscow was under fire.

Stalingrad marks the beginning of the truly southern reaches of the Volga. Sturgeon from the Caspian migrate upriver almost to that great industrial city.

The Volga splits into many channels and frays out into the Caspian through a reed-covered, marshy delta, where Astrakhan serves as Russia's New Orleans.

Note: The U. S. S. R. is shown on the National Geographic Society's Map of Asia and Adjacent Areas, which was issued as a supplement to the December, 1942, *National Geographic Magazine*. A price list of maps may be obtained from the Society's headquarters in Washington, D. C.

For additional information, see "Mother Volga Defends Her Own," *National Geographic Magazine*, December, 1942; and these GEOGRAPHIC SCHOOL BULLETINS: "Flat Russia's Winter Sweeps Far South," October 26, 1942; "Russian Oil, Magnet of the Caucasus," October 5, 1942; and "Russia's Volga Is Europe's Longest River" (Geo-Graphic Brevity), May 11, 1942.

Bulletin No. 1, February 22, 1943.

Maynard Owen Williams

THE SHIP OF THE DESERT EXCHANGES BURDENS WITH VOLGA RIVER BOATS

Above Astrakhan the lower Volga is a desert river, flowing sluggishly through the salt steppe of the Caspian Sea's northern margins—land made desert by salt, not heat. Once these steppes were sea bottom, but the Caspian receded, leaving white stretches of barren sand dunes or plains sparsely fuzzed with grass. Most of the inhabitants are nomads, although a few villages huddle beside the river. Typical are the Mongolian Kalmucks (Kalmyks), a tribe of stranded Asiatics left west of the Volga when most of their wandering tribesmen moved back toward China. Among these Asiatics the two-hump camel is at home, often used as a draught animal (above), harnessed to a wooden cart carrying wool, hay, or a barrel of fish to a Volga landing for shipment up the river. The camel driver is a Russian, wrapped in a coat of padded cotton against the cold that paralyzes the steppes in winter and at night.

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Marseille, Home of the Marseillaise, in Nazi Grip

THE busiest of all the ports of France and the nation's second-largest city has received a special blow from the Nazis. To enforce the evacuation of the port district, Marseille was held in a state of siege until all occupants of that area could be driven from their homes.

A city of 900,000 inhabitants, Marseille's population is ten times its number at the beginning of the 19th century, largely because of the tremendous increase in Mediterranean commerce brought about by the opening of the Suez Canal in November, 1869, and the acquisition of colonies in Africa.

The old port section, with its narrow, winding streets, tumble-down houses, apache hangouts, and sailor taverns, is the core of the modern city. Beyond the old town, reaching inland on every side, has developed the Marseille of broad, busy streets, fashionable shops, luxurious cafes, and residential neighborhoods.

Canal Boats "Cross" Hills by Tunnel

Standing at the western end of the Riviera—the crescent of Mediterranean coast named from the Italian word meaning "between the mountains and the sea"—Marseille is blessed by nature with a deep harbor. But its use was handicapped by the amphitheater of bare limestone hills which almost isolated the seaside city from the country to the north.

Communication between the port and its hinterland was provided by tunnels. Canal barges as well as trains come and go through underground tubes. The 4½-mile Rove Tunnel floats barges and small boats underground from the harbor to the Rhône River and the network of rivers and canals covering France. Highways were built as alternate routes.

Completion of the Suez Canal made Marseille the premier port for cargoes to and from India and the Far East. The city also has come to be the center of France's sea-borne commerce with eastern Mediterranean countries and the African colonies due south across the Mediterranean—Morocco, Algeria, and Tunisia. As trade increased, the port outgrew its harbor.

A policy of ceaseless improvement was established for the port. Additions include three miles of breakwaters, fifteen miles of quays, and a remarkable "aerial tramway," the Transporter Bridge, which carries passengers and vehicles across the entrance of the old port on a moving platform. The platform of the bridge is suspended about ten feet above the water of the harbor by cables, from a track 870 feet long. The pylons which support the span are 280 feet high.

Industry Followed Shipping

Industries were few in the early days of Marseille. Shipping was paramount. Factories were a sort of afterthought but took root, in number and variety. Notable now are the olive oil refineries, the soap- and candle-making plants, and the oil seed crushers.

Metal trades and engineering normally employed about one-tenth of all the industrial workers. Their products included locomotives, boilers, motor cars, hydraulic machinery, and ship fittings. Sugar refineries, rice mills, textile and shoe factories, macaroni and chemical plants were sizable contributors to the city's industrial payroll.

To sing the *Marseillaise,* France's national anthem, is to acknowledge the

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pests. The industry is now being encouraged, under government plans for improving stock and establishing accessible refrigerator plants.

Most extensive and least developed of all Venezuela's hinterlands are the Guiana Highlands, spreading south and east of the 1,500-mile-long Orinoco. With the exception of a few scattered "islands" of settlement, most of these uplands are wild forested areas, inhabited by Indian tribes and an assorted jungle population of jaguars, monkeys, snakes, alligators, wild pigs, lizards, and birds of all colors and kinds. It is believed to be one of the continent's richest sources of raw materials, awaiting only the necessary development.

New iron mines are reported now being opened up, and gold has long been an important product. Diamonds are found there, and useful forest commodities such as balata, a rubbery gum used for insulating material and golf-ball covers, tonka beans used for perfume and flavoring, and divi-divi used in tanning.

Note: Venezuela is shown on the National Geographic Society's Map of South America, which was issued as a supplement to the *National Geographic Magazine*, October, 1942.

For additional information on Venezuela, see these articles in the *National Geographic Magazine:* "Caracas, Cradle of the Liberator," April, 1940*; "I Kept House in a Jungle," January, 1939*; "In Humboldt's Wake," November, 1931*; and the following GEOGRAPHIC SCHOOL BULLETINS: "Venezuela and U. S. Gasoline," November 10, 1941; and "Colombia-Venezuela Border Dispute Settled" (Geo-Graphic Brevity), May 19, 1941. *(Issues marked by an asterisk (*) are included in the special list of Magazines available to teachers at 10¢ each in groups of ten.)*

Bulletin No. 2, February 22, 1943.

Luis Marden

THIS SCHOOL TEACHES BOYS AND GIRLS HOW TO BRING HOME THE BACON

The Tamanaco Rural School in the outskirts of Caracas teaches, in addition to readin' and writin', the ABCDG's of vitamins in healthful food and the 2 + 2 of making both ends meet. Instead of bringing their homework to school, these knee-high economists buy their school work and take it home. The curriculum includes cooking, poultry and rabbit raising, and agriculture, with "class work" in the school's kitchens and extensive gardens. The school runs a cooperative store (*Almacen y Cooperativa*) where child-farmers buy from child-shopkeepers the produce of their gardens to take home, at the lowest possible prices. The "Precios de Hoy" list indicates that beans (*frijoles bayos*) cost only 12 céntimos, hulled corn (*maiz pilado*), 7½ céntimos. Other items are parched corn meal (*harina maiz tostado*), rice flour (*harina de arroz*), granulated sugar (*azucar*), wheat flour (*harina de trigo*), rice (*arroz*), and *papelón*, coarse brown sugar molded in bullet-shaped loaves.

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Oyster Industry an "Early American" Saved by Conservation

THE MEAT shortage, hitting America this winter during the "R months," is helping to bring back to prominence one of the earliest American foods.

The Indians ate so many oysters that the discarded shells form long mounds on the shores of most of the coastal States. Some, 15 feet high, cover 30 acres along the Maryland margins of Chesapeake Bay.

Algonquian braves especially liked oysters to piece out their meat diet as a change from the corn and squash grown by the squaws. All of the catch not eaten fresh was dried, smoked, and strung on slender twigs, to be carried to inland camps. Some of the smoked oysters were bartered to hungry white settlers.

"R" Rule a Useful Superstition

The ship *Sarah Constant,* bearing North America's first permanent English colonists to Jamestown in the spring of 1607, anchored at the entrance to Chesapeake Bay, where the voyagers promptly began enjoying the "very large and delicate" oysters of the region. Later, when the young Virginia colony was in danger of starving, some of the settlers moved temporarily downstream from Jamestown to the Chesapeake oyster beds. Since then, Chesapeake Bay has become famous as the world's leading natural oyster bar.

Such was the colonists' enthusiasm over oysters that conservation measures were necessary even before the Revolution. In 1766 Rhode Island enacted laws "for the preservation of the oyster" to keep beds from being scraped bare. Connecticut began protecting oyster fisheries in 1784, assuming conservation to be one of the first responsibilities of the newly formed United States.

Oysters once led the list of America's fishing industries, but eventually the oyster shelf of Davy Jones's locker began to look like Mother Hubbard's cupboard. Now guarded by conservation measures, oystering is the nation's third-ranking fishing industry, with its production annually valued around 8½ million dollars. It is surpassed by the salmon and tuna industries.

Early comers to America's oyster feasts did not restrict themselves to the eight months with "r" in their names. The "R month" rule is a superstition that grew as settlement expanded inland. People feared that oysters might spoil on long, un-iced, hot-weather journeys from sea to table.

The practice of granting a summer holiday to the oyster serves to protect the bivalve rather than the eater, for summer is the spawning season.

Chinese Showed How for Oyster Farming

The biography of an oyster stew begins with a microscopic speck of infant shellfish, one of 16 million offspring of the same bivalve mother, swimming within the tidal margins of salty coastal waters. At the age of two weeks, pinhead size makes it heavy enough to sink to the bottom, where it settles down for life on any smooth, clean object in reach. When a month old, it is half as big as a peanut, and already at work building its stony protective shell.

The oyster sits and drinks all day, gulping up to 4½ gallons of sea water an hour through a gap between the two valves of its shell. From this liquid diet it strains the nourishing minerals washed from the soil into the sea. Calcium, spread inside in pearly layers, enlarges the shell's diameter an inch a year.

Forty years ago the continent's coastal waters yielded half again as many

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place of its earliest use. Captain Rouget de Lisle, a professional soldier and an amateur musician, wrote words and music in one night, in response to the request of the Mayor of Strasbourg (where de Lisle was then stationed) for a stirring marching song for the French soldiers. Sung with great enthusiasm by a band of revolutionaries marching from Marseille to Paris, in 1792 during the French Revolution, it became the namesake of the Mediterranean port.

Famous for Fish Dishes

Bouillabaisse, a highly seasoned fish chowder, is another of Marseille's claims to fame. Its popularity has spread through Spain and into the United States.

Along the waterfront in peacetime a great variety of seafood was served at open air stalls where patrons stood informally at rough tables and ate their fill of oysters, cockles, mussels, and the strange sea hedgehogs that look like huge chestnut burrs.

Note: Marseille is shown on the National Geographic Society's Map of Central Europe and the Mediterranean.

For further information, see "France Farms as War Wages," in the *National Geographic Magazine*, February, 1940*; and these GEOGRAPHIC SCHOOL BULLETINS: "What Is Left of France," October 14, 1940; and "Fire Sears Marseille, Second City of France," December 12, 1938.

Bulletin No. 3, February 22, 1943.

Clifton Adams

A CHURCH STANDS SENTINEL OVER FRANCE'S CAPTIVE PORT

Topping one of Marseille's highest hills, the rounded dome and tall spire-topped tower of the Church of Notre Dame de la Garde are landmarks to sailors out at sea, beyond this Mediterranean port. Behind the ship masts fencing the waterfront of the Old Harbor, narrow streets stairstep up the slopes and wind through an area of the city where a large part of the population is Italian. Before the war a large fraction of the 900,000 inhabitants of Marseille were Italians. In peacetime, 8,000,000 tons of merchandise annually entered and cleared the port in nearly 20,000 ships, and half a million travelers embarked and disembarked along Marseille's many miles of quays. Half of the imports were grains, vegetable oil products, and crude oil.

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Why Do These German Cities Get Bombed?

NOW that units of the U. S. Army Air Forces join the R. A. F. in attacks on Germany, more and more bombed German towns appear in American headlines. The brief news announcement of a raid may not explain the reason, but the explanation lies in the answer to this question: What does the city contribute to Germany's war effort?

Wilhelmshaven First German Target of All-Out American Bombing

Wilhelmshaven, first German city to be pounded by an all-American bomber squadron, is the westernmost big naval base in Germany, and the nearest to the grim Battle of the Atlantic now being fought out between United Nations convoys and Nazi submarine packs. It is 365 air miles from London.

The base has shipyards that are frantically turning out submarines. There are drydocks and ship basins, large and small, where U-boats can be repaired.

The ship basins are built with locks at their entrances, because of the great difference in water level between high and low tides.

Wilhelmshaven has been an important naval base for 90 years. The site on Jade Bay, due south of Helgoland—German island sentinel in the North Sea—was bought for naval use in 1853. In 1939 the city had about 32,000 inhabitants.

Stuttgart Was Birthplace of German Auto Industry

Stuttgart is the Detroit of Germany, birthplace of her automobile industry. It is one of the cities that put Germany's original blitzkrieg on wheels.

In the city's northeast section, known as Unterturkheim, the large Daimler-Benz automobile plant got its start when Gottlieb Daimler built a motorcycle in 1885 and an automobile in 1886.

In the adjoining Cannstatt section is the large Bosch works, where magnetos, spark plugs, and electrical instruments long have been manufactured.

Capital of Wurttemberg in southwest Germany, near the famous Black Forest, Stuttgart is 110 miles east of the French border near Strasbourg.

In the past 60 years it has become a great industrial center, with a population over 400,000, in a growing industrial region. Stuttgart was known as a pre-war producer of chemicals, textiles, pianos, and machinery.

Cologne, a Giant Crossroads Named for Nero's Mother

Cologne (Köln) ranks as Hitler's fourth-largest city, the crossroads of western Germany, and metropolis of the Rhineland. Normally a city of 760,000, Cologne is outranked only by Berlin, Vienna, and Hamburg.

The Berlin-to-Paris railroad, the Rhine Valley railroads, and the Rhine River, greatest inland waterway of Europe, all meet at Cologne. The city commands the rail approaches to Belgian and French coast "invasion ports," now viewed as possible British-American thresholds to invasion of the continent. The Cologne bottleneck is essential to their quick reinforcement by the Germans.

Beneath Cologne's four bridges across the Rhine (illustration, next page) pass more than 15 million tons of shipping a year.

Its acres of factories turned out aluminum for airplane manufacture, synthetic oil and rubber, plane and U-boat engines.

Founded in 38 B. C., Cologne was made a Roman colony in 50 A. D. Emperor Claudius named it *Colonia Agrippina* in honor of his wife, who was born there.

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oysters as fishermen collect these days. The gradual depletion of wild oyster beds is typified by the Chesapeake fisheries, which 60 years ago yielded from 25 to 30 million bushels a year. Now the annual crop may be less than one-seventh as large. Efforts around the 1880's to protect the Chesapeake beds started "oyster wars" between government patrol boats and an oyster-pirate fleet armed with cannon. Now the seafood patrol enforces conservation laws protecting oysters smaller than a prescribed size.

Since the wild oyster has become scarce, the bivalve now served on the half-shell is often as domesticated as the strawberry or the tomato—a product of planting, transplanting, cultivating, and harvesting.

The Chinese early developed a method of underwater farming for cultivating oyster beds. Their example is copied by oyster farmers on the Pacific coast and along Atlantic shores northward from New Jersey (illustration, below).

Maryland stands at the head of the United States oyster industry, taking nearly 20 million pounds of the seafood from the Chesapeake's still fertile waters. Virginia, sharing the Chesapeake, runs a close second. Louisiana, likewise exploiting natural beds with a minimum of cultivation, comes third.

Careful water-farming makes New Jersey, in spite of growing scarcity in northern waters, the fourth-ranking producer, with the Pacific States next.

Bulletin No. 4, February 22, 1943.

H. Armstrong Roberts

BIVALVE'S SEAFOOD-FARMERS SOW FROM BOATS FOR A HALFSHELL HARVEST

This thicket of sailboat masts rises along the waterfront at Bivalve, the New Jersey town named after oysters. New Jersey is, roughly speaking, the dividing line between the south's wild oysters and the north's farm-bred bivalves. In well-cared-for northern beds oystermen plant cultch on the sea bottom—any firm, clean material to which the infant oyster may attach itself, usually oyster shells. Then small seed oysters are sown to supplement the bed's natural yield, and young oysters transplanted to give them more room to grow. Finally the underwater crop of full-grown bivalves is harvested. Youngsters under market size are thrown back. A few U. S. farms produce "hand-grown" oysters fattened in underwater trays.

Agrippina later was slain by her son, the Emperor Nero, who burned Rome. The name *Colonia* became Cologne in French, Köln in German.

Pforzheim, from Jewelry to Munitions

Pforzheim, a southwest German city of 80,000, normally has one of the world's largest jewelry industries. Before the war more than 22,000 workers were cogs in the mass production of gold and silver jewelry.

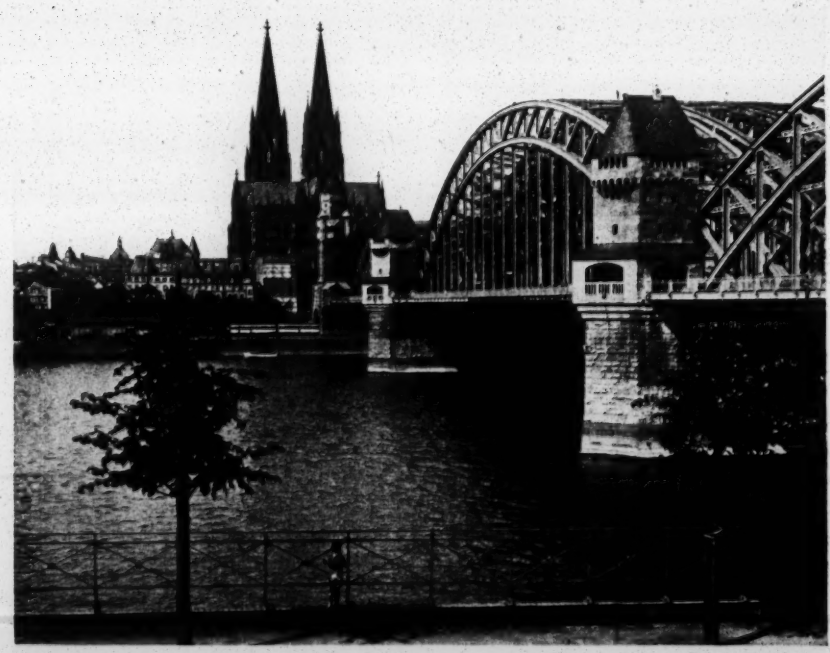
But bombing attacks call attention to its copper plants, producing the metal needed for electric wiring in instrument panels, for brass for cartridges and shells. The city has chemical and machinery plants, and forges for metals.

Spread over hillsides 30 miles northwest of Stuttgart, at the northeast corner of Germany's famous Black Forest, Pforzheim softens the harshness of its smoke-belching industries with 17th-century gabled residence and business buildings, venerable bridges crossing the Enz and Nagold Rivers that meet there.

Manufacture of jewelry at Pforzheim had its origin in the Black Forest guild of lapidaries—workers in precious stones—whose heyday was in the 16th century. The Industry House was pre-war headquarters for a permanent exhibit of the varied craft of over 500 jewelry manufacturers.

Pforzheim was once a Roman settlement, *Porta Hercinia*, meaning "Gate of the Hercinian Forest." Its most ancient landmark is the 11th-century Castle Church, divided into separate sections for Roman Catholics and Lutherans.

Bulletin No. 5, February 22, 1943.



Donald McLeish

TOWERS THAT GUIDED PILGRIMS NOW POINT BOMBERS TO COLOGNE'S TARGETS

The principal landmark of the city—an unmistakable guide for bombing planes—is the Cathedral, or Dom, with its twin steeples 515 feet high. Begun in 1248, it was completed in 1880 with lottery funds. Old Cologne, with its traces of Roman ruins, clustered around the Dom. British bombs did not damage it, according to the Germans. During the French Revolution Cologne became a French city; French armies made the Dom a hay barn for their horses. After Waterloo, Cologne became a part of Prussia. The Hohenzollern Bridge's piers and towers crouch like ugly ducklings beside the Dom's graceful spires.

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